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How to Spot an FBI Provocateur

By Jennifer Van Bergen

This was not the first time I was approached by a spook, or the first time I have pegged one for what he was, but it was the first time I was approached by a man claiming to be an Iraqi-American. In the rush that usually occurs after one speaks publicly with several people waiting to chat, I tried to listen politely as I offered ""Nabil"" my attention. After five minutes, though, I found myself feeling bad for getting a little annoyed at him. He carried on about loving America and loving Iraq and seemed to be trying to hint at something beyond this – making vague references to what the U.S. was doing to Iraq.

Finally I said to him, "Why are you telling me this?" After all, I speak publicly about these things, so why did he feel he needed to tell me what I was already speaking about?

Unfortunately, I rarely recall specifics of what people say to me after I make a speech – or perhaps "Nabil" was being purposefully vague, because it seemed to me that he really wasn't saying anything. Yet, he wouldn't let me go. I told him several times that I needed to leave, as I had a long drive ahead of me.

Several other people wanted to speak to me, yet "Nabil" continued to follow me around and try to talk to me – about what, I could not discern.

Finally, I said that if things continued as they were in this country, it would eventually collapse. This seemed to deeply satisfy him. He said that people here didn't care what happened in Iraq. They would care only if it hap-

(**FBI** *continued on page 2*)

Why We See Conspiracies (That Don't Exist)

The Physics of 9/11 (Part Two)

By MANUEL GARCIA, Jr

Five years after the events of September 11, 2001, conspiracy theories abound as an anxious public seeks to find a comprehensible story for that day and more broadly for their socio-political world. People need reliable foundations upon which to base the many assumptions and conventions they use to carry on their lives.

Half a century ago, public anxiety about the danger of atomic energy and the terror of thermonuclear war exhibited itself in sightings of flying saucers, and a fad of monster movies. C. G. Jung wrote about flying saucer sightings as an instance of "mass psychosis": a "psychological infection" that spreads among people who lack sufficient understanding to rationalize fearsome political forces and unstable social conditions (*Flying Saucers: A Modern Myth*, 1958). Jung was sensitive to any indication that another "psychological epidemic" might erupt, as Nazism did, among a population whose government possessed awesome military power. Mass psychosis is a myth held in common, which releases the population from the "normal" restraints of rationality and international social conventions, so they can pursue their mythical vision. The ignorance — and the fears that spring from it as prejudices — of the entranced population is "projected" onto "enemies" whose destruction is sought in the irrational effort to eliminate the actual problem of psychological tensions, (1)

A more entertaining expression of popular anxiety is the monster movie. "Godzilla," "Rodan," "Them," "The Thing" and many others safely frightened viewers with stories of monsters whose introductions into human society were caused by atomic bomb testing, or were accompanied by radioactivity. For most Americansthe major source of any knowledge of physics is probably this type of motion picture.

The myths we construct to express our understanding of the realities we are immersed in are limited by the range of our knowledge. When the myths are meant to cover over fears about forces beyond our control, they can be conspiracy theories. Consider these pairings of fears and rationalizations:

* fear of political power/conspiracy theories;

* metaphysical fear (fear of death)/religion, a theological conspiracy ;

*fear of personal inadequacy/racism,

*fear of strange cultures/ultra-nationalism

Certainly, so long as there are more than two people on Earth, conspiracies will occur. But too often we invoke a conspiracy in constructing our story of the world because we lack specific information about the sciences, economics, history and other relevant fields of specialized knowledge. Experience has shown that if the evidence allows for several explanations to a given problem then the hypothesis with the fewest assumptions is most probably correct. This principle is called Occam's Razor and is attributed to the 14th-century English logician and Franciscan friar William of Ockham (c. 1295–1349) (2).

The events of September 11, 2001, were unsettling for many Americans because their existing myths were shattered;

(**9/11** *continued on page 3*)

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pened to them.

I left him then and only the next morning did it occur to me that what "Nabil" was trying to do was to goad me into making a declaration of some unlawful or violent intent. That was when it occurred to me that "Nabil" was a spook: a paid informant or an undercover operative.

My first thought was that the FBI must not keep very good records or train their operatives very well because they had sent numerous others on the same or similar missions. They had to know that I am a believer in nonviolence and in the rule of law – not to mention the United States Constitution. Anyone reading my articles must now this.

But more importantly, "Nabil"'s activities reveal a government policy that post-9/11 activists have long suspected: the FBI is not only monitoring peace activists but is working to entrap such people. Several recent cases offer further proof of this conclusion: the outing of paid FBI informant, "Anna," in the West Coast "Green Scare" cases and the arrests of the Miami "Liberty City Seven" on the basis of an affidavit by an FBI operative. In both of these cases, the FBI clearly did more than infiltrate and monitor groups that might pose a threat to national security. In each case, the FBI goaded, provoked, provided funding and materials, and in the Liberty Seven case even demanded the individuals sign a loyalty oath to al-Qaeda. In fact, so desperate was the FBI to capture the Miami miscreants that arrests were made despite the fact that the seven had all already walked away from the alleged conspiracy, which makes the case almost a sure loser for the government.

The FBI has monitored me at least since I first spoke out (post-9/11) at a town meeting in front of a panel of Muslim community members and overt FBI agents. A few weeks after this, a markedly taciturn and unfriendly man showed up at a Unitarian Universalist meeting at which I was asked to speak about the PATRIOT Act. This was a congregation of mostly senior citizens who all knew each other, yet nobody knew the man who spoke to no one, sat and listened intently to my every word, and then rapidly disappeared.

Why is the FBI wasting time trying to provoke peace activists into making some unlawful statement?

Spooks have infiltrated groups I've chaired. One handsome man of uncertain ethnic origins showed up at a start-up meeting for the Bill of Rights Defense Coalition in South Florida. I was facilitating the meeting and caught this young man staring at me in rapt fascination more than once. Why would he be so interested in me? My youthful beauty? Sorry. My charming and electric personality? Right.

Well, when he saw me see him looking at me, he stopped his appreciative stares. Although he said he was from Pittsburgh, another member of the group who hailed from there found he knew nothing about the city. He never returned to our group. But he did start showing up at another group allied with ours and he continued to monitor that group for quite a while, until he showed up all in new all-black duds (imitating the Black Block anarchists, we supposed) at the FTAA protests in Miami and thereafter was never seen again.

These are hallmarks of spook behavior. Mark them.

Another young man joined the volunteers for a large forum we planned on dissent since 9/11. He professed no interest in politics, was entirely ignorant of most of the issues which concerned us, and disappeared shortly before the event, claiming he had decided to relocate and start a new life. Meantime, he had access to lists of speakers and volunteers.

Both of these men had never been seen before and were never seen thereafter.

Why my government is spending my tax dollars to monitor me, an upright, loyal citizen who believes more deeply in the Constitution and laws of this country than do most U.S. officials sworn to uphold them. I was a patriot before it was popular to say so. I will defend free speech more strongly and at greater personal risk than most members of the ACLU (and I have proof of that). (I actually take the time to answer hate mail!)

If there really are so many horrible, dangerous terrorists out to get us, why, then, is the FBI wasting time and resources trying to provoke me into making some unlawful statement? Why are our intelligence agencies infiltrating meetings of peace groups, like the one in Lake Worth, Florida, that NBC News discovered was attended by the DOD? I attended that meeting and was one of its organizers and presenters. The subject was counter-recruitment. Is that a national security threat? Am I?

The only threat I or these other peaceful persons could possibly pose would be to government officials themselves engaged in violent or unlawful activities, in lying to the public, in engaging in wars of aggression, in unlawfully detaining and torturing people, many of whom have been shown to be completely innocent, and in evading and intentionally violating federal laws.

Why is the FBI not banging on their doors? Why is not the DOJ bringing charges against them? CP

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these myths had provided comfort and lain undisturbed in consciousness since indoctrination had lodged them there. The increasing power of communications technology – global telephone networks, the Internet – and the accelerating disregard of subtlety by the elite in its management of public perceptions about government policies has eroded the myths – or illusions – of many Americans. So, trust in government has been broken, fear of its power is vivid, and understanding of the physical mechanisms of Nature is limited. This psychology will naturally sprout conspiracy theories about 9/11.

The aim of this article is to supply some understanding of physics as it relates to several of the features of the 9/11 events, so that readers can expand their range of rationality and hence their political maturity.

The reports on the investigations of the collapse of the World Trade Center buildings conducted by the National Institute of Standards and Technology (originally the National Bureau of Standards) are to be found at a special NIST website ("NIST & The World Trade Center, Final Report (Sept. 2005)," http://wtc.nist.gov/pubs/#draft (September 11, 2006).

"There is not the slightest need to postulate pre-placed explosives to explain whya the towers collapsed at near free fall speeds."

This multi-volume Final Report, issued in September 2005, is the "official word." There is a vast amount of dry text, much data, descriptive summaries of detailed calculations of the impact ruptures, fires and heating, subsequent deformation, load-shifting, buckling and ultimate failure of the buildings. NIST addressed the sequence of events and shifting of loads leading up to the failure that allowed the upper blocks to drop; it did not proceed to a detailed simulation of the collapses to the ground. NIST justified this on the grounds that there was sufficient energy in the descending blocks to crush the lower structures, once failures had occurred.

The controlled demolition hypothesis for the collapse of the World Trade Center buildings is described at length in a Wikipedia article ("Controlled demolition hypothesis for the collapse of the World Trade Center")

The popularity of 9/11 conspiracy theories (also outlined in a useful Wikipedia entry) has prompted NIST to present a very nice webpage addressing the usual questions of the conspiracy viewpoint, and providing clear descriptions in non-technical English of the physics and engineering explanations embodied in the NIST WTC Towers Final Report .

Summary of NIST Findings

The World Trade Center Towers (WTC 1, WTC 2) were tall square buildings with supporting columns grouped along the vertical axis (center) and closely spaced along the perimeter (building faces). A "hat truss," at the top of each building, tied the outer walls to the central columns; and this truss had a height equal to that of five stories.

A hijacked airliner was crashed into each building about 10 or 20 stories down from the top. The columns along one face of the building were sheared for a height of several floors, as were many of the columns at the core. The exploding fuel from the airliner ignited fires throughout the levels within the impact zone, as well as dropping fire down the stairwells and elevator shafts at the building's core, and billowing up to higher levels. The shocks of impact and detonation loosened the "fire protection" thermal insulation on steel beams in the impact zone.

The damaged core columns in the impact zone could no longer hold up all the weight they were meant to carry. The core columns in the upper block now found it necessary to partially hang from the hat truss. The hat truss pressed down much more forcefully on the perimeter columns, transferring the load of the hanging weight. The added compression of the perimeter columns could only be distributed to the three undamaged faces, and because of the irregularity of the damage one face assumed a much higher load than the other two.

The fuel fire burned up to 1,100 degrees C (2,000 degrees F) for perhaps 10 minutes. It ignited the many plastic furnishing (carpets, curtains, furniture, equipment cases, clothing, fixtures, office ceilings and partitions), paper items (paper supplies, books, pressed wood), and some structural elements (gypsum wall boards, plastic plumbing), which then continued the fire. The exposed steel beams in the impact zone heated to between 700 C to 1,000 C. Steel at 700 C has 50 per cent to 70 per cent of its strength at habitable temperatures; and steel at 1,000 C has between 10 per cent to 30 per cent.

The floors in the impact zone sagged because of broken joints to central columns, heat causing their metal framing to soften, weaken and expand; also because of the weight of debris fallen from above . The sagging floors twisted their joints to the perimeter columns (on the three intact faces); the length of column above a floor joint being twisted inward. For one face of the building, the combined stress of the original weight above it, the added compression from the hat truss, and the torque from the sagging floors were too much. Its perimeter beams were bent inward to the point of failure, and they buckled.

The NIST investigation was an extremely detailed analysis by 200 engineers and building professionals, describing the conditions of the buildings from the instant an airplane collided to the moment a collapse began. The next section of this CounterPunch report carries the story downward from the point where NIST leaves off. NIST concentrated its resources on the greatest uncertainty: what initiated the collapse? It was understood that once an upper block of the building was in motion the structure below would be unable to counter the dynamic forces, and collapse would proceed to the ground.

Physics Problem Number 1: Free Fall of the WTC Towers

"How could the WTC towers collapse in only 11 seconds (WTC 1) and 9 seconds (WTC 2), speeds that approximate that of a ball dropped from a similar height in vacuum (with no air resistance)?" (NIST FAQ #6)

The suspicion behind this question is that the Towers were weakened by surreptitious, controlled demolitions. In this view, the structure below the impact zone (where airplanes collided, exploded, and fires burned) "should have" provided resistance to the descent of the block above the impact zone, slowing or even stopping the collapse.

The NIST response is that the lower structure was only designed to hold up the weight above any given floor statically, not dynamically. The force imparted by the collision of the upper block was beyond the

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limits of the lower structure to resist. The lower structure was essentially crumbled by a "hammer" of descending material, and the mass of this hammer increased during the course of the collapse.

Let's explore further.

Problem 1, Force Balance

Once the framing in the impact zone has failed, the upper block is accelerated by gravity until it crashes into the lower structure below the impact zone. Labeling the mass of the upper block m, and its speed v, the block would have a momentum m*v and an energy of (1/2)*m*v^2. Its weight would be m*g, where g is the constant of gravitational acceleration (9.81 meters/second^2).

The balance of forces on the upper block as it impacts the lower structure is presented here as the impulse momentum form of Newton's 2nd Law:

The time rate of change of momentum = The sum of the forces,

[m*v(final) - m*v(initial)]/dt = F - m*g.

Here, positive direction, velocity and force are taken to be vertically upward; dt is a label for "delta t", a very brief time interval during which the impact occurs and the momentum changes from m*v(initial) to m*v(final); and F is the force of resistance by the lower structure. If A is the net horizontal cross-sectional area of the load-bearing columns of the lower structure, then F/A is the average compressive stress across that area.

This type of force balance is applied to the impact at each floor, sequentially, by redefining m as the mass above it, v(initial) as the outcome of the alternating floor impacts and free falls during prior compaction, and v(final) as the outcome of the latest impact.

We can regroup the terms of the force balance as follows:

F = m*g + m*[v(final) - v(initial)]/dt,

F = m*g*[1 + {v(final) - v(initial)}/(g*dt)],

F/(m*g) = 1 + {v(final) - v(initial)}/(g*dt).

Before each building was perturbed, the upper block did not have any motion, v(initial) = v(final) = 0, and the magnitude of the upward-directed, resisting force of any part of the structure was equal to the weight of material above it; F/(m*g) = 1.

When an upper block drops through an impact zone that has lost structural strength, and crashes into the rigid lower structure, it imparts a dynamic force in addition to its weight. The dynamic force is the second term in the last expression for F. The total force, F, acts during the time interval dt during which the momentum of the upper block is reduced (in magnitude) from m*v(initial) to m*v(final). Clearly, the lower structure will crumble when F is greater than the maximum force it can support, or when F/A is greater than the maximum stress it can withstand.

Problem 1, Numerical Example of Progressive Collapse

Free fall without air resistance from a height H takes time T, given by

T = square root [(2*H)/g].

At any time 0 < t < T during the free fall, the velocity is given by

v(t) = -g*t, (negative sign for downward direction),

and position is given by

h(t) = H - (1/2)*g*t^2.

So, for H = 440 m (=1443 feet) the free fall time is T = 9.5 s, and the velocity slamming into the ground is -92.9 m/s = -208 mph.

What actually happened in the buildings? We consider a suggestive numerical example.

It is inconceivable that our demolitions expert would time his surreptitious explosions to occur HOURS after the aircraft impact.

With the onset of failure, the upper block drops through a space of L = 3 meters, taken to be the distance between floors. Starting from rest at time t = 0, the block reaches a velocity of v = -7.7 m/s at t = 0.78 s. The descending block makes contact with the topmost stationary floor of the lower structure.

We will assume these floor structures to be dL = 1 meter thick (1 meter = 3.28 feet). Each floor structure is a framework of steel below and within a layer of concrete. The floors spanned a distance of between 10 m and 20 m between the outer square perimeter (63.4 m a side) and the core support along the axis of the building, which housed elevator shafts, stairwells and support columns, within a rectangular area of [42 m x 27 m].

Impact is a very brief process whose duration is dt = 1/100 s. During the impact, energy ripples through the floor structure as elastic waves in the steel and concrete; the velocity of these stress waves is V(steel) = 1900 m/s and V(concrete) = 930 m/s; the wave speed is a property of the material (P-waves). The waves traverse the thickness of the floor structure in a time dL/V = 5/10,000 s for steel and 1/1000 s for concrete, so they can bounce between 10 to 20 times across the 1 m thickness; and they can run along the span of the floor within 0.005 to 0.01 s.

The waves alert the volume of the floor structure to the imposition of a new load, and infuse that volume with much higher stress. The floor structure is deflected downward a distance d = -0.077 meters (3 inches) during impact. In becoming stressed, the floor structure absorbs some of the energy of the descending block, slowing it by dv = 0.5 m/s (in this example). Within dt = 1/100 s, the floor structure has transmitted the force of the new load to its joints with the building's core and periphery.

Recalling the last form of the force balance, and inserting the numbers from this example, we find the magnitude of the total reaction force to be

F/(m*g) = 1 + dv/(g*dt) = 1 + 0.5/(9.81*0.01) = 6.1,

a load of six times the weight of the upper block.

I continued this particular calculation, floor by floor, as a sequence starting from rest: free fall for 3 m, impact delays transit for 0.01 s and decreases descent velocity by 0.5 m/s, free fall for 3 m, transit delay and velocity decrement as before, and so on. The block reaches the ground in 10 s with a total of 87 floor impacts. The collapse of 344 m (1128 feet) accelerates from -7.2 m/s (-16 mph) after the initial impact, to -46 m/s (-104 mph) at the ground.

Now, a little bit more about waves.

Problem 1, Wave Trains and Stress Concentration

Elastic waves are launched from the collapse front (the leading edge of descending material, like "weather front") at the moment of first impact. Within 0.01 s, a stress wave has traveled through the metal framework to five levels below the collapse front, a distance of 20 m. These

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lower levels experience a rapid – dare I say explosive? – increase in the stress within their frames. Bolts and rivets may be sheared, and joints ruptured by the resulting impulsive forces.

For example, assume a carbon steel (HR 0.45C) bolt or rivet of 1 inch diameter is used to support a force of 8,000 kilograms, equivalent to a stress of 22,500 pounds-per-square-inch (psi). This stress is only one quarter of that material's tensile strength of 90,000 psi; an apparently conservative design. However, an unexpected increase in load by a factor of five, to a total of 48,000 kg, or 135,000 psi, would probably rupture the joint.

The stress wave from the initial impact races down the lower structure, arriving at ground level in 0.18 s (we continue with the numerical example). During that time, the collapse front has descended another 1.3 m. The stress wave is like a messenger telling the material it passes to "move down and compress" in response to the advancing collapse front. On reaching the ground, the wave could transmit some of its energy past the building's foundation to radiate as a seismic wave through the earth, and another portion of its energy would reflect back up (the major effect, especially if the foundation is more rigid than the building it supports). The message of the upward running wave is "compress even more, dead-end down below."

Elastic waves launched by an impulsive load on a structure that remains intact – like a bell being struck – will ripple back and forth, spreading out the initially concentrated stress of the strike. If the load is suddenly imposed and then remains constant, as with a book being dropped on a sturdy table, then the elastic waves die out into a fairly uniform distribution of stress throughout the volume. If the load is a short pulse, like striking a bell, then the waves will eventually die out as a fairly uniform heating of the material.

Just as there are ripples on wavelets, and wavelets on big rollers across the surface of the ocean, so will each elastic wave launched by the collapse be a jumble of waves of different size grouped together. The many individual collisions of material that make up the global impact of the upper block into a floor structure will each send off their own ripples, which all build up into a composite for the elastic wave.

A new elastic wave is launched with each impact between the collapse front and a stationary floor structure. As the collapse front accelerates, the time interval between wave launchings decreases. The building below the collapse front experiences an increasing level of stress and becomes filled with intersecting wave trains moving up and down by the time of the second impact at 1.13 s. Elastic waves that pass through each other will produce a heightened stress where they coincide, just like crossing water waves that mound noticeably.

This agitated lacework of stresses ahead of the collapse front will probably cause many fractures and break many joints prior to the arrival of the front. The sudden shifts in the volume of rooms and office spaces being compressed and twisted by the elastic wave trains can easily expel jets of air and dust out of windows, perhaps giving the impression of smoke from a gun barrel. The collapse front will push a blast of air down before it and also produce lateral jets of air from the building below it. These air streams are analogous to the water expelled sideways and into vortexes alongside a paddle pushing a canoe through still water.

All these wave effects occur in the upper block as well, from the moment of first impact. The upper block will quickly fill with elastic waves, which will rupture internal joints; the block shatters, as is vividly seen in the video recordings of the WTC collapses. The shorter length of the upper block, and its lack of firm connection (like a foundation), will contribute to the speed of its disintegration. In a very real sense the upper block was "blown up," but naturally by elastic waves rippling a destructive compression through it rather than artificially by intentional controlled demolition.

Pancaking, Buckling and Hyping (Red Herring #1)

Two days after the collapse of the World Trade Center Towers, Zdenek P. Bazant, a civil engineering professor at Northwestern University, publicized his theory of the collapse initiation. His conjectures about loosened fire insulation and heated steel losing strength survived the subsequent scrutiny by NIST. However, NIST rejected Bazant's proposed mechanism for the initiation of the collapse, referred to subsequently as the "pancake model" or "pancaking." Because of its early appearance on the scene, Bazant's model was widely circulated. Critics of NIST and the "official" story will point to the divergence of NIST's conclusions from Bazant's, four years earlier, as an indication of ignorance, confusion – or worse – complicity and cover-up on the part of the "government" people.

Bazant's pancake model is shown in Figure 1 of his report . Bazant assumed that interior columns within the impact zone would weaken from heating, buckle, and then the upper block would fall through the impact zone onto the lower structure. This impact would cause the columns in the immediate levels below ("3 to 10 seems likely") to bow, or in Bazant's words:

"This causes failure of an underlying multi-floor segment of the tower…, in which the failure of the connections of the floor-carrying trusses to the columns is either accompanied or quickly followed by buckling of the core columns and overall buckling of the framed tube, with the buckles probably spanning the height of many floors…, and the upper part possibly getting wedged inside an emptied lower part of the framed tube."

In other words, the upper block falls within the perimeter columns onto a lower floor, and that shock pops the floor joints around the perimeter and at the core for 3 to 10 floors below. Once in motion, this process would crush all beneath it.

NIST concludes:

"NIST's findings do not support the pancake theory of collapse…[The] investi-

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gation showed conclusively that the failure of the inwardly bowed perimeter columns initiated collapse and that the occurrence of this inward bowing required the sagging floors to remain connected to the columns to pull the columns inwards. Thus, the floors did not fail progressively to cause a pancaking phenomenon."

For a shot from the hip two days after the collapse, Bazant did pretty well. But, after the NIST legion did all the necessary homework, we now have an accurate result. NIST shows pictures of the inward buckle of the perimeter wall, taken from a police helicopter. Pancaking versus NIST is a nonexistent technical argument only to be found in the imagination of some conspiracy-minded people. The technical community migrated from early hypotheses of the initiation, like pancaking, to the NIST conclusions as a consequence of doing the hard work required. And, there was always unanimity on what drove the collapse once it was initiated: excess dynamic force produced from the gravitational potential energy contained within even one level spacing. Once the top began to fall, it was going to crush the building below it, regardless.

The Absurdity of "Controlled Demolition" (Red Herring #2)

Pierre Sprey is CounterPunch's technical reviewer of this report. His comments about the controlled demolition hypothesis are so cogent that I include them here.

Sprey:

"There is not the slightest need to postulate pre-placed explosive charges to explain why the towers collapsed at near free fall speeds. Let me note a few practical aspects of explosive demolitions that make the explosive charge hypothesis improbable to the point of absurdity:

"1. Any demolitions expert concocting a plan to hit a tall building with an airplane and then use pre-placed explosives to UNDETECTABLY ensure the collapse of the building would never place the explosives 20, 30 and 60 floors below the impact point. Obviously, he would put the explosives on one or more floors as close as possible to the planned impact level.

"2. It is inconceivable that our demolitions expert would time his surreptitious explosions to occur HOURS after the aircraft impact. He couldn't possibly be absolutely certain that the impact fires would even last an hour. Quite the opposite: to mask the booster explosions, he'd time them to follow right on the heels of the impact.

"3. To ensure collapse of a major building requires very sizable demolition charges, charges that are large enough to do a lot more than emit the "puffs of smoke" cited as evidence for the explosives hypothesis. I've seen both live and filmed explosive building demolitions. Each explosion is accompanied by a very visible shower of heavy rubble and a dense cloud of smoke and dust. Just that fact alone makes the explosives hypothesis untenable; no demolitions expert in the world would be willing to promise his client that he could bring down a tall building with explosions guaranteed to be indistinguishable from the effects of an aircraft impact."

My Conclusions

The WTC towers collapsed at speeds approaching that of free fall because:

1. The dynamic force created out of the gravitational potential energy within the space of just one level spacing was far in excess of the static force the framing was designed to support, and

2. Elastic waves launched from the collapse front quickly filled the building – both lower structure and upper block – with large dynamic stresses, which weakened and ruptured joints well in advance of that material entering the collapse front.

The towers shattered, and the pieces fell to the ground.

In a forthcoming instalment of this report, I will address the topic of heat, a prominent feature of many conspiracy theories about the collapse of the WTC buildings. CP

Manuel Garcia a native New Yorker who works as a physicist at the Lawrence Livermore Laboratory in California with a PhD Aerospace & Mechanical Engineering, from Princeton. His technical interests are in fluid flow and energy, specifically in gas dynamics and plasma physics; and his working experience includes measurements on nuclear bomb tests, devising mathematical models of energetic physical effects, and trying to enlarge a union of weapons scientists.

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